



PATENT  
Attorney Docket No. 86550-9001US

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of:

George P. Pollack

Art Unit: 2833

Application No. 09/587,948

Examiner: Figueroa, Felix O.

Filed: June 5, 2000

For: INSULATION DISPLACEMENT ELECTRICAL  
PLUG ASSEMBLY AND METHOD OF  
MAKING PLUG ASSEMBLY

**TRANSMITTAL OF  
APPELLANT'S APPEAL BRIEF**

Mail Stop: Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Dear Sir:

In accordance with 37 CFR 1.192, appellant hereby submits Appellant's Brief on Appeal in triplicate.

The items checked below are appropriate:

**1. Status of Appellants**

This application is on behalf of ☐ other than a small entity or ☒ a small entity.

**2. Fee for Filing Brief on Appeal**

Pursuant to 37 CFR 1.17(e), the fee for filing the Brief on Appeal is for: ☐ other than a small entity or ☒ a small entity.

**Brief Fee Due** \$250.00

**3. Oral Hearing**

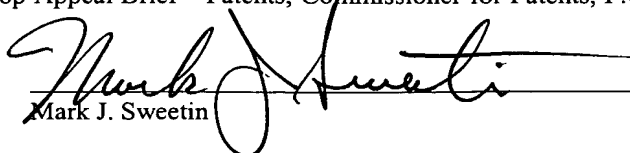
☐ Appellants request an oral hearing in accordance with 37 CFR 1.194.

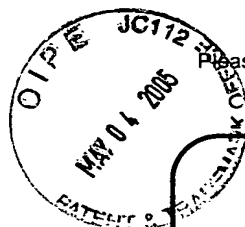
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Date: May 2, 2005

  
Mark J. Sweetin



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# TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application No.	09/587,948
Filing Date	June 6, 2000
First Named Inventor	POLLACK, George P.
Group Art Unit	2833
Examiner Name	FIGUEROA, Felix O.
Attorney Docket Number	86550-9001US

Total Number of Pages in This Submission

## ENCLOSURES (check all that apply)

- ☐ Fee Transmittal Form
  - ☒ Fee Attached
- ☐ Amendment / Response
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/Incomplete Application
  - ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53

- ☐ Assignment Papers (for an Application)
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition Routing Slip (PTO/SB/69) and Accompanying Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Small Entity Statement
- ☐ Request for Refund

- ☐ After Allowance Communication to Group
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☒ Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
- ☐ Proprietary Information
- ☐ Status Letter
- ☒ Additional Enclosure(s) (please identify below):

Appendices A-C; Return receipt postcard

Remarks

## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Barry W. Sufin, Reg. No. 27,398 Gardner Carton & Douglas LLP
Signature	
Date	May 2, 2005

## CERTIFICATE OF MAILING

I hereby certify that this correspondence, along with any accompanying documents, is being deposited with the United States Postal Service as First Class mail in an envelope addressed to: Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22312-1450 on this date May 2, 2005

Typed or printed name	Mark J. Sweetin	Date	May 2, 2005
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CH02/ 22382106.1



PATENT  
Attorney Docket No. 86550-9001US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Appln. of George P. POLLACK

Application No. 09/587,948

Filed: June 6, 2000

For: "INSULATION DISPLACEMENT ELECTRICAL PLUG ASSEMBLY AND  
METHOD OF MAKING PLUG ASSEMBLY"

Art Unit: 2833

Examiner: F. Figueroa

Confirmation No. 9711

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

**APPELLANT'S APPEAL BRIEF**

Dear Sir:

The Appellant submits this Appeal Brief in support of the Notice of Appeal mailed to the Patent Office on March 1, 2005. The fee set forth in 37 C.F.R. § 1.17(c) accompanies this brief.

**I. REAL PARTY IN INTEREST**

The real party in interest is Eastco Corporation, the assignee of this application.

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**4. Extension of Time**

- ☐ Appellants petition for a one-month extension of time under 37 CFR 1.136, the fee for which is \$110.00
- ☒ Appellants believe that no extension of time is required. However, this conditional petition is being made to provide for the possibility that appellants have inadvertently overlooked the need for a petition and fee for extension of time.

**Extension fee due with this request: \$0.00**

**5. Total Fee Due**

The total fee due is:

Brief on Appeal Fee	\$250.00
Request for Oral Hearing	\$ 0.00
Extension Fee (if any)	\$ 0.00

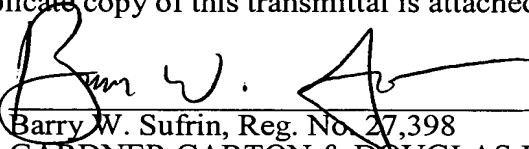
**Total Fee Due: \$250.00**

**6. Fee Payment**

- ☐ Attached is a check in the sum of \$ .
- ☒ Charge Account No. 07-0181 the sum of \$250.00. A duplicate of this transmittal is attached.

**7. Fee Deficiency**

- ☒ If any additional fee is required in connection with this communication, charge Account No. 07-0181. A duplicate copy of this transmittal is attached.

  
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Date: May 2, 2005

**II. RELATED APPEALS AND INTERFERENCES**

No prior or pending appeals, interferences or judicial proceedings are known to appellants, to appellants' legal representative, or to assignee which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**III. STATUS OF CLAIMS**

Claims 1 – 3, 5 – 13 and 15 – 21 were pending in the application at the time of filing and remain in the case. The final Office Action appealed from rejected all of the pending claims. This appeal is directed to the pending rejections of claims 1 – 3, 5 – 13 and 15 – 21.

**IV. STATUS OF AMENDMENTS**

No amendments were filed subsequent to the final Office Action of December 10, 2004.

**V. SUMMARY OF CLAIMED SUBJECT MATTER**

The claims under consideration in the appeal include three independent claims, nos. 1, 5 and 13.

**A. Independent Claim No. 1**

Independent claim 1 is directed to an electrical terminal 16 for mounting in a pre-formed channel 22 in a plug housing 12. Plug housing 12 is described in the specification beginning on page 7, line 6 through page 8, line 16. Plug housing 12 and its channels 22 are also illustrated in Figures 1 – 7. The electrical terminal 16 is described in the specification on page 9 through page 11, line 6. The electrical terminals are illustrated in Figures 2 – 3 and 8 – 14.

Terminal 16 of independent claim 1 includes a crimp flange 28 having a pair of upwardly directed opposite side portions 34 and a bottom portion 36 extending between the interconnecting side portions. The electrical terminal also includes at least one insulation-piercing knife 30 which is integral with the crimp flange and projects

from the bottom portion of the terminal into the space between the terminal side portions. Finally, electrical terminal 16 includes a blade 32 that extends from crimp flange 28. This blade is intended for insertion into an electrical socket once the terminal is mounted in the plug housing. Blade 32 includes a web portion 38 that is connected to the crimp flange as well as a plurality of lance-formed barbs 40 along the web portion for abutting against the wall of pre-formed plug housing channel 22 to resist removal of the electrical terminal from the plug housing.

B. Independent Claim 5

This claim is directed to an electrical plug assembly including an electrical terminal 16 as generally described above that is mounted in pre-formed channels 22 in plug housing 12. This is described in the specification, beginning on page 6, line 28 through page 11, line 6. The plug assembly is illustrated in Figures 1 – 3 and 15, while its electrical terminals 16 are shown in Figures 2 – 3 and 8 – 14.

Plug housing 12 of the electrical plug assembly has opposite front and rear ends 12A and 12B. The housing includes a pair of spaced apart pre-formed channels 22 which are open at each of their opposite ends 22A and 22B. Insulated conductors 14 are disposed at least partially within the channels 22 of the plug housing. The insulated conductors each have an end 14A, an electrical wire 24 and a layer of insulation 26 covering the wire.

Finally, electrical terminals 16 are insertable into the channels of the plug housing at the front 12A of the housing. Each of these terminals includes a crimp flange 28 with a pair of upwardly directed opposite side portions 34 and a concave arcuate-shaped bottom portion 36 extending between and interconnecting the side portions. The electrical terminals also each include at least one insulation-piercing knife 30 that is integral with the crimp flange and projects upwardly from the bottom portion 36 into the space between the side portions. Finally, the electrical terminals each include a blade 32 that extends from the crimp flange for insertion into an external electrical socket for making an electrical connection.

C. Independent Claim 13

This claim is directed to a method of making a plug assembly, the plug assembly

being generally as described above. The method of making the plug assembly is set forth in the specification, beginning on page 11 line 7 through page 12 line 7. The method is also illustrated in Figures 12 – 15.

The method of independent claim 13 includes a first step of providing a plug housing and a plurality of electrical terminals, as described above. More particularly, each of the electrical terminals has a crimp flange 28, at least one insulation-piercing knife 30 connected to the crimp flange and a blade 32 connected to the crimp flange for insertion into an external electrical socket. The crimp flange has a pair of upwardly directed opposite side portions 34 and a bottom portion extending between and interconnecting the side portions. The knife extends upwardly from the bottom portion of the crimp flange and is disposed between the side portions so that the end of the insulated conductor can be placed between the side portions of the crimp flange and over the piercing knife.

In the second step of the method of claim 13, the insulated conductors are each passed through channels of the plug housing such that portions of each of the insulated conductors extend from the front end of the plug housing. Then, the electrical terminals are aligned with the end portions of the insulated conductors. This is illustrated in Figure 13.

Next, the electrical terminals are crimped on the ends of the insulated conductors (Figure 14) so that insulation on the insulated conductors is penetrated and an electrical connection is made between the electrical terminals and the electrical wires contained within the insulated conductors. Finally, the crimped electrical terminals are secured on the insulated conductor ends within the channels of the plug housing (Figure 15).

## **VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

1. Product claims 1 – 3 and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Klumpp, Jr. (U.S. Patent No. 2,982,938, Exhibit A) in view of Takemasa (U.S. Patent No. 6,045,408, Exhibit B). The Examiner argues that Klumpp discloses an electrical terminal comprising:

- A crimp flange (21) with a pair of upwardly-directed side portions (22 – 24) and a bottom portion extending between and interconnecting the side portions.
- At least one insulation piercing knife (26, 27) integral with the crimp flange and projecting from the bottom portion into the space between the side portions.
- A blade (20) extending from the crimp flange for insertion into an electrical socket.

The Examiner acknowledges that Klumpp fails to teach a plug housing with pre-formed channels or the plurality of lance-formed barbs 40 along the web portion for abutting against the wall of pre-formed plug housing channel 22 to resist removal of the electrical terminal from the plug housing. He argues, however, that Takemasa teaches a plug housing (20) with a pre-formed channel (28) and an electrical terminal (50) having a blade (51) and a web portion (53) including barbs along the web portion for abutting against a wall of the pre-formed channel. He also argues it would have been obvious in view of Takemasa to form the electrical terminal of Klumpp with a web portion having barbs for abutting against a wall of the pre-formed channel in order to provide easy assembly and to ensure correct contact alignment.

2. Product claims 5 – 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gilbert (U.S. Patent No. 2,229,288, Exhibit C) in view of Klumpp, Jr. In support of this rejection, the Examiner argues that Gilbert discloses an electrical plug assembly comprising:

- A plug housing (1) with opposite front and rear ends defining spaced apart pre-formed channels (14) open at each of its opposite ends and insulated conductors disposed within the channels.
- A pair of electrical terminals (2, 3) insertable into the channels at the front end of the plug housing, each terminal including a blade extending from a cable-connecting portion for insertion into an external electrical socket.

The Examiner acknowledges that Gilbert does not teach the structure of the cable-connection portion of the electrical terminals including the crimp flanges, knife, etc. He argues, however, that in teaching an electrical connector comprising a plug housing, a pair of insulated conductors, etc., Klumpp provides an efficient and strong electrical



and mechanical connection between terminals and cables which would have been obvious to one of ordinary skill in the art to employ within the structure of Gilbert.

3. Product claim 12 and method claim 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gilbert and Klumpp, Jr., and further in view of Takemasa. The Examiner argues that with respect to these claims that Gilbert as modified by Klumpp, Jr. discloses the subject matter of these claims but for the undulating barbs. He then argues that Takemasa teaches blades (51) including a web portion (53) with a plurality of undulating barbs (64) to securely fasten the electrical terminal to the housing. Finally, he argues that it would have been obvious to provide the terminals of Gilbert with these barbs in order to increase friction and securely retain the electrical terminal to the housing.

4. Method claims 13, 15 and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gilbert in view of Klumpp, Jr. The Examiner argues in support of this rejection that the Gilbert structure inherently discloses the method claimed:

- Providing a plug housing and a plurality of electrical terminals.
- Passing a pair of insulated conductors through channels of the plug housing.
- Aligning ends of the terminals with portions of the wire that extend from the plug housing.
- Crimping the electrical terminal on the ends of the conductors.
- Securing the terminals on the channels of the housing.

The Examiner acknowledges that Gilbert does not teach the specific crimping structure of the terminal but argues that Klumpp supplies this deficiency.

## V. ARGUMENT

### A. Claims 1 – 3 and 21 are improperly rejected under 35 U.S.C. § 103(a) as being unpatentable over Klumpp, Jr in view of Takemasa

As explained earlier, the sole independent claim of this grouping, claim 1, is directed to an electrical terminal for mounting in a pre-formed channel in a plug housing.

The Examiner rejects this claim as obvious by combining the teachings of

Klumpp, Jr. and Takemasa. Applicant respectfully disagrees with the appropriateness of the proposed combination and with the Examiner's interpretation of the teaching of these two patents.

First, Klumpp, Jr. is concerned with terminals for mounting in a plug housing molded around a pair of terminals, and not with terminals for mounting in pre-formed channels in a plug housing. This is apparent from Figure 1 of the Klumpp, Jr. patent, and from the inclusion of terminal tang or lug 31 which secures the terminal within the molded plug housing and would preclude the use of terminals of the Klumpp, Jr. design in a plug housing having pre-formed channels.

The Examiner ignores this fatal shortcoming of the Klumpp, Jr. patent, while acknowledging the related failure of Klumpp, Jr. to provide the plurality of lance-formed barbs along the web portion of the terminals for abutting against a wall of a pre-formed plug housing channel to resist removal of the terminals of claim 1. He argues, however, that Takemasa supplies this deficiency.

Applicant disputes the propriety of combining the teaching of Takemasa with that of Klumpp, Jr. Applicant also disputes the Examiner's representation of what Takemasa actually teaches.

Takemasa describes electrical contacts for use in multiple contact circuit board-mounted electrical connectors, not in electrical plugs. One such connector 100 is illustrated in Figures 4a – 4c of the Takemasa patent. This obviously miniature contact 50 is shown in enlarged form in Figures 3a and 3b and a multiplicity of these miniature contacts are shown mounted in housing 20 in Figure 2. As explained in the Takemasa patent, electrical contacts 50 are fastened in place from the rear of the housing by pressing shoulder 66 by means of a jig not shown in the patent. (Col. 3, l. 33 – 35.) Most importantly, there is no mention of a wire, conductor or cable in this patent nor any suggestion of where or how a wire, conductor or cable might be attached to the Takemasa contacts.

The Examiner improperly seeks to combine the teaching of Klumpp, Jr. with the misconstrued and deficient teaching of Takemasa since these two patents are concerned with completely different kinds of terminals and contacts used in completely different

contexts from each other and from the invention of the present application.

Furthermore, the terminals of Klumpp, Jr. are designed for molded-in-place plugs and are structured in a way that would be prevent them from being mounted in a pre-formed plug housing channel. Finally, the contacts of Takemasa contain no teaching with regard to attaching conductors to the contacts finally driving home the inappropriateness of reliance on Takemasa in support of the present rejections. For these reasons, it is believed that the rejection of claims 1 – 3 and 21 over Klumpp, Jr. in view of Takemasa should be reversed.

**B. Claims 5 – 11 are improperly rejected under 35 U.S.C. § 103(a) as being unpatentable over Gilbert in view of Klumpp, Jr.**

Claim 5 concerns an electrical plug assembly in which the plug housing of the assembly includes a pair of spaced apart pre-formed channels therethrough *open at each of the opposite ends of the channel*. The Examiner argues, *inter alia*, that Gilbert discloses an electrical plug assembly with a housing defining a pair of spaced apart pre-formed channels 14 therethrough open at each of the opposite ends thereof. Applicant respectfully disagrees with this reading of Gilbert. As explained at column 2, lines 35 – 37 of Gilbert:

Channel 14 extends from the upper end of the body to a point 15 somewhat above the bottom of recess 9.

Thus channels 14 do not extend through the plug and are not open at each of the opposite ends thereof. Gilbert's channels thus would not accommodate the terminals of the present invention or the assembly method of the present invention.

Also, the Gilbert device neither teaches nor suggests the use of a crimp flange. The Examiner argues, however, that Klumpp, Jr. supplies the crimp flange, etc. features. As already noted, Klumpp, Jr. is concerned with plug housings molded-in-place around fully-wired contacts and for this reason is believed not to be properly relied upon in the present context. For these reasons, it is believed that the rejection of claim 5 – 11 over Gilbert in view of Klumpp, Jr. should be reversed.

**C. Dependent claims 12 and 17 are improperly rejected under 35 U.S.C. § 103(a) as being unpatentable over Gilbert and Klumpp, Jr. and further in view of Takemasa**

Claim 12 is dependent on product claim 5 and claim 17 is dependent upon method claim 13. These claims are both directed to barbs for preventing removal of the terminals of the invention from plug housing channels. Thus, these claims require that the web portion of the terminals have a plurality of undulations formed along opposite sides of the web portion so as to define lance-formed barbs for abutting a wall of the channel to prevent removal of the terminal. Claim 12 also requires that the barbs be capable of entering the channels from the front end of the plug housing. Both of these claims were rejected as obvious over Gilbert and Klumpp, Jr. in view of Takemasa. As noted earlier, however:

- Gilbert does not teach channels extending through the plug.
- Gilbert does not teach use of a crimp flange.
- Klumpp, Jr. is concerned with a different type of plug in which the terminal is molded-in-place, not mounted in a pre-formed channel.
- Takemasa is concerned with multiple contact circuit board-mounted electrical connectors, not with electrical plugs.
- Takemasa does not even mention a wire, conductor or cable, nor does it suggest how a wire, conductor or cable might be attached.

In addition, these claims expressly require that the undulations defining the barbs be present along opposite sides of the web of the terminal whereas Takemasa's projecting members 69 relied upon by the Examiner are present on only one side of the Takemasa contacts and are not associated with a web portion of a terminal. Furthermore, the Takemasa contacts are not capable of entering the plug channels from the front of the plug housing as required by claim 12.

For these reasons, it is believed that the rejections of claims 12 and 17 over Gilbert and Klumpp, Jr. in view of Takemasa should be reversed.

D. Claims 13, 15 and 16 are improperly rejected under 35 U.S.C. § 103(a) as being unpatentable over Gilbert in view of Klumpp, Jr.

The Examiner argues that the Gilbert structure inherently discloses the rejected

method claims and that Klumpp, Jr. discloses the electrical terminal set forth in the first step of the method.

However, as already noted, Klumpp, Jr. describes a housing in which the contacts are molded in place. That reference is therefore not properly relied upon in rejecting a method of making a plug assembly as set forth in claim 13, where the plug housing is formed contact-free and the contacts are subsequently inserted therein during the course of performing the claimed method. Accordingly, it is believed that the rejection of claims 13, 15 and 16 over Gilbert in view of Klumpp, Jr. should be reversed.

**VI. CLAIMS APPENDIX**

An appendix containing a copy of the claims involved in the appeal is attached as Appendix A.

**VII. EVIDENCE APPENDIX**

Copies of the references cited by the Examiner are attached:

U.S. Patent No.	Inventor	Exhibit
2,982,938	Klumpp, Jr.	A
6,045,408	Takemasa	B
2,229,288	Gilbert	C

**VIII. RELATED PROCEEDINGS APPENDIX**

No decisions have been entered by a court of the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of 37 C.F.R. § 41.37.

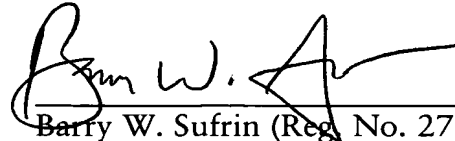
**IX. CONCLUSION**

For the reasons advanced above, it is requested that the rejections of claims 1 – 3, 5 – 13 and 15 – 21 be reversed.

In re Appln. of George P. Pollack  
Application No. 09/587,948

Respectfully submitted,

Date: May 2, 2005



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APPENDIX A

Claim 1: An electrical terminal for mounting in a pre-formed channel in a plug housing, comprising:

- (a) a crimp flange having a pair of upwardly directed opposite side portions and a bottom portion extending between and interconnecting said side portions;
- (b) at least one insulation piercing knife integral with said crimp flange projecting from said bottom portion into the space between said side portions; and
- (c) a blade extending from said crimp flange for insertion into an electrical socket, said blade including a web portion connected to said crimp flange and a plurality of lance-formed barbs along said web portion for abutting against a wall of the pre-formed channel to resist removal of said electrical terminal from said plug housing.

Claim 2: The terminal of Claim 1 wherein said at least one insulation piercing knife is a pair of insulation piercing knives cut out and bent upwardly from said bottom portion of said crimp flange.

Claim 3: The terminal of Claim 2 wherein said insulation piercing knives are disposed substantially in a tandem alignment with one another.

Claim 4:

Claim 5: An electrical plug assembly, comprising:

(a) a plug housing having opposite front and rear ends and defining a pair of spaced apart pre-formed channels therethrough open at each of said opposite ends thereof;

(b) a pair of insulated conductors each having an end and an electrical wire and a layer of insulation covering said wire and being disposed at least partially within one of said channels of said plug housing; and

(c) a pair of electrical terminals each being insertable into one of said channels of said plug housing at the front end of said plug housing, each said terminal including:

(i) a crimp flange having a pair of upwardly directed opposite side portions and a concave arcuate-shaped bottom portion extending between and interconnecting said side portions;

(ii) at least one insulation piercing knife integral with said crimp flange projecting upwardly from said bottom portion into the space between said side portions; and

(iii) a blade extending from said crimp flange for insertion into an external electrical socket for making an electrical connection.

Claim 6: The assembly of Claim 5 wherein said housing is of a one-piece construction.



Claim 7: The assembly of Claim 5 wherein each of said electrical terminals has a one-piece construction.

Claim 8: The assembly of Claim 5 wherein:  
each of said electrical terminals has opposite ends; and  
said crimp flange of each said electrical terminal is disposed at a rearward position on said electrical terminal adjacent to one of said opposite ends thereof.

Claim 9: The assembly of Claim 8 wherein said blade of each of said electrical terminals is disposed at a forward position on said electrical terminal opposite from said crimp flange and adjacent to the other end of said opposite ends of said electrical terminal and extending therefrom toward but spaced from said one opposite end of said electrical terminal.

Claim 10: The assembly of Claim 5 wherein said at least one insulation piercing knife of said electrical terminal is a pair of insulation piercing knives cut out and bent upwardly from said bottom portion of said crimp flange of said electrical terminal and disposed between said side portions of said crimp flange of said electrical terminal.

Claim 11: The terminal of Claim 10 wherein said insulation piercing knives are disposed substantially in a tandem alignment with one another.

Claim 12: The terminal of Claim 5 wherein said blade includes a web portion connected to said crimp flange having a plurality of undulations formed along opposite sides of said web portion so as to define lance-formed barbs capable of entering one of said channels from the front end of said plug housing and abutting a wall of said channel to prevent removal of said electrical terminal by being pulled back through said one channel after said insulated conductor end and said electrical terminal have been inserted into said one channel of said plug housing.

Claim 13: A method of making a plug assembly, said method comprising the steps of:

(a) providing a plug housing and a plurality of electrical terminals, each of the electrical terminals having a crimp flange, at least one insulation piercing knife connected to the crimp flange and a blade connected to the crimp flange for insertion into an external electrical socket, the crimp flange having a pair of upwardly directed opposite side portions and a bottom portion extending between and interconnecting the side portions, the knife extending upwardly from the bottom portion of the crimp flange and disposed between the side portions of the crimp flange such that the end of the insulated conductor can be placed between the side portions of the crimp flange and over the piercing knife whereupon prior to insertion of the electrical terminal into the respective one of the channels of the plug housing the crimp flange is crimped onto the insulated conductor end by bending the side portions of the crimp flange toward one another over and downwardly toward the insulated conductor end such that the side portions of the crimp flange press the insulated conductor end downwardly upon

the piercing knife which pierces and displaces insulation of the insulated conductor end and makes an electrical connection with an electrical wire of the insulated conductor and such that after crimping the crimp flange the electrical terminal may be inserted into the channel of the plug housing at the one of opposite ends of the plug housing to a point spaced interiorly from the other of the opposite ends of the plug housing;

(b) passing a pair of insulated conductors through channels of the plug housing such that separate portions of each of the insulated conductors extend from opposite ends of the plug housing;

(c) aligning ends of the electrical terminals with the portions of the insulated conductors which extend from one of the opposite ends of the plug housing;

(d) crimping the electrical terminals on the ends of the insulated conductors such that insulation on the insulated conductors is penetrated and electrical connections are made between the electrical terminals and electrical wires within the ends of the insulated conductors; and

(e) securing the crimped electrical terminals on the insulated conductor ends within the channels of the plug housing.

#### Claim 14

Claim 15: The method of Claim 13 wherein said electrical terminal is provided with a pair of insulation piercing knives cutout and bent upwardly from the bottom portion of the crimp flange.

Claim 16: The method of Claim 15 wherein said insulation piercing knives are provided substantially in a tandem alignment with one another.

Claim 17: The method of Claim 13 wherein the blade of the electrical terminal is provided with a web portion connected to the crimp flange and having a plurality of undulations formed along opposite sides of the web portion so as to define lance-formed barbs which abut against the plug housing and prevent removal of the electrical terminal by being pulled back through the one channel and therefrom after the insulated conductor end and the electrical terminal have been inserted into the one channel of the plug housing.

Claim 18: The method of Claim 13 wherein the terminals are provided with an interconnecting strip and the strip is removed concurrently with the crimping of the electrical terminals.

Claim 19: The method of Claim 13 wherein the terminals are provided with an interconnecting strip and the strip is removed after the crimping of the electrical terminals.

Claim 20: The method of Claim 13 wherein the terminals are provided with an interconnecting strip and the strip is removed before the crimping of the electrical terminals.

In re Appln. of George P. Pollack  
Application No. 09/587,948

Claim 21: The terminal of claim 1 in which the bottom portion is concave shaped.

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